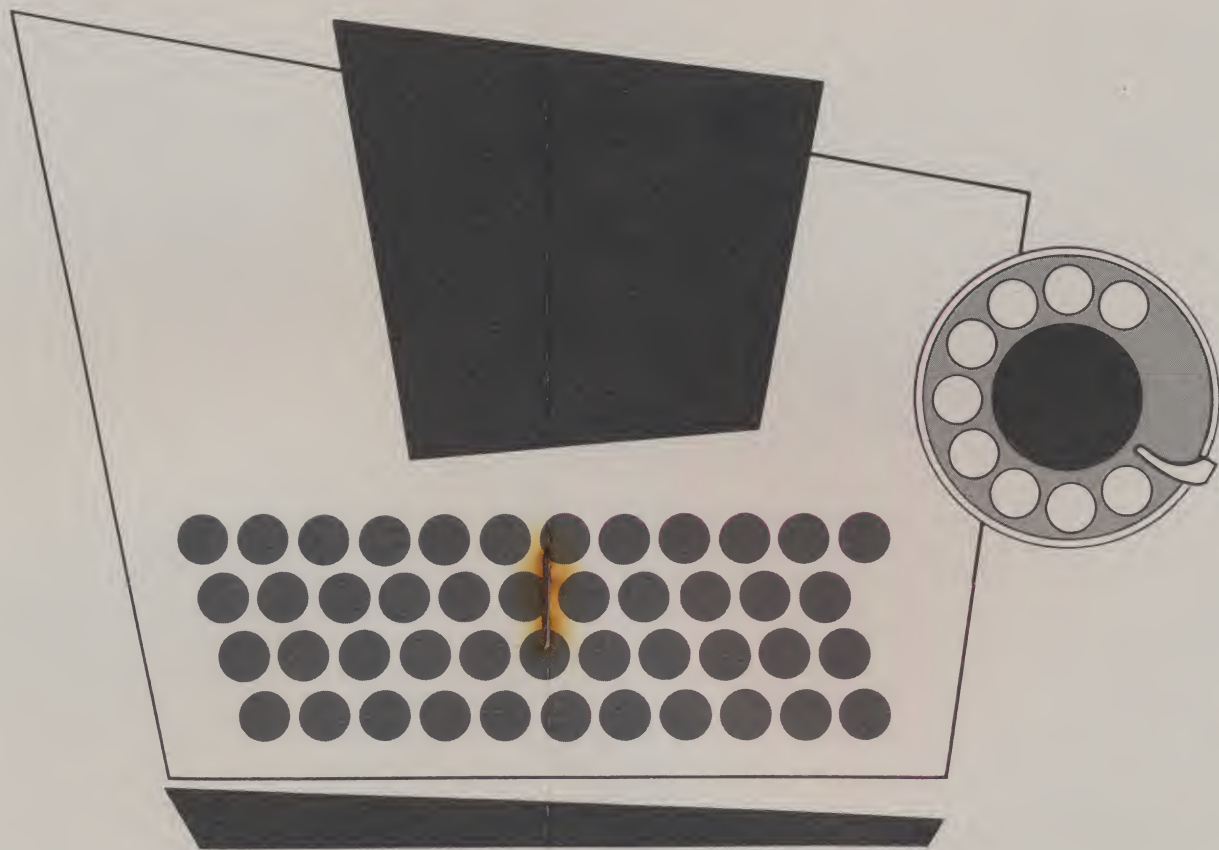


TELCOMP

time-shared computer services

*designed for scientists
and engineers*

BOLT BERANEK AND NEWMAN INC



TELCOMP SERVES YOU . . .
through immediate access

TELCOMP time-shared computer services are designed to meet specific needs of scientists and engineers. TELCOMP services are easy to use. In defining and solving problems, you communicate directly with the computers through the use of English words and standard mathematical notation. Because you have immediate access to the TELCOMP computers, you avoid costly and annoying delays.

TELCOMP services are available wherever you want them. You can have direct access to TELCOMP by means of a teletypewriter terminal right in your office. The terminal is connected to the TELCOMP computers via ordinary phone lines. All you do is call the nearest TELCOMP computer center, using the phone installed on the terminal, and ask to be connected with TELCOMP. You don't have to schedule computer time in advance, because TELCOMP is always ready when you are.

TELCOMP gives you immediate on-line solutions, in numerical or simple graphical form. You don't have to wait. TELCOMP is designed to work for many people simultaneously. Even though other persons are using the same computer you are, TELCOMP treats you as if you were the only one.

TELCOMP reduces costly turnaround time. You never spend anxious hours or



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days awaiting a solution, only to learn that you have a mistake in your program. TELCOMP lets you write, debug, and run programs all in the same operation. Further, TELCOMP's rich vocabulary of error commentaries and diagnostics helps you locate and correct errors as they occur.

TELCOMP affords on-line storage for your programs. A simple command to the computer is all that is needed to store your program. Once your program is stored, TELCOMP will retrieve it on command and save you the time and trouble of typing it in each time that you need it.

TELCOMP offers continually improving service through evolving hardware and software systems. The TELCOMP II language, for example, is fully compatible with the original TELCOMP language and offers many additional features, including greater speed, more powerful editing commands, and increased precision. Also, variables may now be given names up to six characters in length; subscripts, up to four in number, may range from 0 through 249.

Having immediate access to TELCOMP takes some of the problem out of problem-solving — which is one of the big reasons for TELCOMP's increasing popularity with busy scientists and engineers.

TELCOMP SERVES YOU . . .
*with a powerful,
easy-to-learn language*

The TELCOMP II language is easy to learn and easy to use. English and basic algebra are combined into a powerful language that you can understand with no previous programming experience. TELCOMP II's rich vocabulary of commands makes it easy for you to give compact expression to sophisticated problems. You can begin using TELCOMP at once, because you don't have to learn the complicated language of computer programmers.

A few examples will show you how easy it is to work with TELCOMP. A command to the computer might look like this:

←TYPE 2+3, 2-3, 2*3, 2/3, 2^3

TELCOMP's answer would look like this:

```
2+3=      5
2-3=     -1
2*3=       6
2/3=      .666666667
2^3=       8
```

You use the command **SET** to define variables,

←SET A=12, B=3

and TELCOMP will then evaluate a function of the variables when you give the command **TYPE** :

```
←TYPE SQRT(A/B)
      SQRT(A/B)=      2
←
```

The problems can be complex, but the TELCOMP commands remain simple.

TELCOMP does more than just carry out simple commands. You can write and debug a program on TELCOMP, run the program, and make program changes when and where you need them. Also,

TELCOMP interacts with you, so you can explore your problem until you find the solution that you want. It is easy to vary data, change parameters, and examine alternative ranges of variables — all of which makes TELCOMP ideal for problem-solving.

The language is also a very powerful one, enabling the user to write compact programs. For example, consider the two-step program below, in which the computer solves for all integral right triangles within a given range:

```
5.1SET HYP=SQRT(LEG1*2+LEG2*2)
5.2TYPE LEG1,LEG2,HYP IN FORM 2 IF FP(HYP)=0

-DO PART 5 FOR LEG1=1:1:LEG2 FOR LEG2=1:1:13
AN INTEGRAL RIGHT TRIANGLE IS 3, 4, 5.
AN INTEGRAL RIGHT TRIANGLE IS 6, 8, 10.
AN INTEGRAL RIGHT TRIANGLE IS 5, 12, 13.
AN INTEGRAL RIGHT TRIANGLE IS 9, 12, 15.
```

The convenient output form was obtained by simply typing the command

```
-FORM 2
AN INTEGRAL RIGHT TRIANGLE IS ##, ##, ##.
```

You can see that it is easy to communicate with TELCOMP. And it is just as easy for TELCOMP to communicate with you. TELCOMP interacts directly with you and actively helps you to solve your problems by calling attention to missing data, and, in general, by catching mistakes. So, you don't have to be perfect. . . TELCOMP recognizes that you are human.

```
-TYPE SIN(X), 1/(1-X) FOR X=1
SIN(X)= .841470985
NO GOOD
YOU TRIED TO DIVIDE BY ZERO
```

```
-TYPE SQRT(X+2+Y+2)
NO GOOD
Y IS UNDEFINED
```

```
-TYPE PART 88
NO GOOD
THERE IS NO PART 88
```

```
-TYPE LOG(X) FOR X=2:-1:0
LOG(X)= .30103
LOG(X)= 0
NO GOOD
LOG OF ZERO
```

TELCOMP II includes 16 mathematical functions frequently used by engineers and scientists, including square root, sine, cosine, arc tangent, logarithms (base 10 and base e), exponential, absolute value, maximum and minimum of a list, and integer, fraction, and exponent parts of numbers. Numbers modifying clauses such as comparison operators and Boolean operators are available in the language; each program statement may contain any meaningful combination of up to six **FOR** and **IF** modifiers.

To date, more than 800 engineers and scientists have used TELCOMP. Most of them had no previous programming experience. These men and women were able to solve problems and run simple programs almost immediately. They were composing and running highly sophisticated programs after only 4 to 6 hours of application.

You have already spent so many years learning English and algebra, why not make the most of it by spending the additional few hours it takes to learn TELCOMP?

TELCOMP SERVES YOU . . .
by increasing your efficiency

TELCOMP helps you do better work and do it faster, especially if you cut your engineering teeth on a slide rule and never quite found the time to become acquainted with modern computer techniques. TELCOMP's simple language allows you to step directly into the sophisticated world of computer programming. As you become more familiar with TELCOMP and learn to make fuller use of its logical power, you will find that you are gaining a broader understanding of computer methods and increasing your ability to utilize the vast wealth of computer techniques.

TELCOMP allows you to make more appropriate use of your present computer facilities. You can use TELCOMP to solve many of the smaller problems that are now taking up expensive time on larger computer systems. Even for very large programs that require batch processing, you can use TELCOMP to pretest the logic, so your program is error-free when it reaches your computer center.

TELCOMP further increases your efficiency by giving you immediate access to your personal library of stored programs, as well as the standard programs stored in the computer. Using TELCOMP's on-line storage feature, you can run "production" programs for obtaining information that must be available on a day-to-day basis.

TELCOMP SERVES YOU . . .
*by freeing you
from capital investments*

TELCOMP service is available to you on three different plans. You select the plan that is best suited to your needs.

Plan 1 • You guarantee to use TELCOMP for a minimum of 8 hours per month. For the first 8 hours, you are billed at \$15 per hour. For each additional hour, you are billed at \$12 per hour.

Plan 2 • You use TELCOMP as much as you like at the rate of \$15 per hour. You do not have to guarantee a minimum monthly usage on this plan.

Plan 3 • You can use TELCOMP through teletypewriters located at BBN offices. On this plan, you pay a flat rate of \$20 per hour for actual on-line time.

Plan 1 includes substantial central storage for customer programs. Additional storage is available at nominal rates. Teletype rental, about \$90 per month, is offered by the Bell Telephone and Telegraph Company, on the same basis as ordinary telephones.